

**DUAL CURE COATING COMPOSITION
AND PROCESSES FOR USING THE SAME**

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ABSTRACT

The dual cure coating composition requires electromagnetic radiation and heat energy to cure and comprises a radiation curable component (a1), a thermally curable binder component (a2), and a thermally curable crosslinking component (a3). Radiation curable component (a1) polymerizes upon exposure to electromagnetic radiation, and comprises at

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least two functional groups (a11) comprising at least one bond activatable with electromagnetic radiation, and one or more isocyanate-reactive functional groups (a12).

Thermally curable binder component (a2) polymerizes upon exposure to heat and has at least two isocyanate-reactive functional groups (a21) and substantially no functional groups (a22) having bonds activatable upon exposure to electromagnetic radiation. Third

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component (a3) comprises at least 2.0 isocyanate groups (a31) per molecule. The ratio of NCO groups to the sum of isocyanate-reactive functional groups (a12) and (a21) is less than 1.30. The invention provides methods of making coated surfaces that have optimum

porosity sealing and adhesion.

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